Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
Cordina-Duverger et al. (2016) France, Cote d'Or and Ille-et- Vilaine departments 2005–2007 Case-Control	**Cases:** 975; Histologically confirmed incident breast cancer cases identified from hospitals within the study region **Controls:** 1317; Cancer free controls resident in the study area at the time of the cases diagnosis. Recruited via random digit dialling. Frequency matched to cases by study area,10-year age group and socioeconomic status. **Exposure assessment method:** other; Subjective assessment; night shift defined (exp 3+ hrs b/w 23–06)	Breast	Night work (OR)			Basic variables (age, study area, age at menarche, parity, age at first full term pregnancy, breast feeding, oral contraceptive use, family history of breast cancer, BMI, alcohol, and tobacco) plus menopausal status, menopausal hormone therapy	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: No. Intensity: Precise. Duration: Complete. Temporality: Complete. No other info available. OTHER COMMENTS: Analyses include ever/never night. Analyses on duration of night work, intensity and night work before first full term pregnancy were also been carried out, but results are not reported. **Strengths:** None stated **Limitations:** None stated
			Never	876	1		
			Ever HER2+ and (ER+ or PR+)	17	2.52 (1.36–4.68)		
			Ever HER2+ and (ER- and PR-)	3	0.75 (0.16–3.38)		
			Ever HER2- and (ER+ or PR+)	71	1.37 (0.97–1.92)		
			Ever HER2- and (ER- and PR-)	8	0.87 (0.39–1.96)		
		Breast	Night work (OR)			Basic variables above	
			pre-menopausal: Never	336	1		
			Ever HER2+ and (ER+ or PR+)	12	3.3 (1.42–7.67)		
			Ever HER2+ and (ER- and PR-)	3	2.3 (0.36–14.7)		
			Ever HER2- and (ER+ or PR+)	42	1.85 (1.14–2.99)		
			Ever HER2- and (ER- and PR-)	3	0.48 (0.12–1.85)		
		Breast	Night work (OR)			Basic variables above, plus menopausal hormone therapy	
			post-menopausal: Never	540	1		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			Ever HER2+ and (ER+ or PR+)	5	1.59 (0.55–4.59)		
			Ever HER2+ and (ER- and PR-)	0	-		
			Ever HER2- and (ER+ or PR+)	29	0.89 (0.53–1.5)		
			Ever HER2- and (ER- and PR-)	5	1.19 (0.41–3.49)		
Grundy et al. (2013) Vancouver, BC and Kingston, ON 2005–2010 Case-Control	**Cases:** 1134; Population-based **Controls:** 1179; Population-based **Exposure assessment method:** other; Subjective assessment; night shift defined (other) and Undefined	Breast	Years of shiftwork history (OR)			Age, centre	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: No. Intensity: Precise. Duration: Complete. Temporality: Complete. Schedule type: Imprecise. Shift start/end times: Imprecise. No other info available. **Strengths:** Info on lifetime occupational history; intensity/frequency of night or evening shifts worked for each job examined; compared risk in health workers and non-health workers. **Limitations:** evening and night work combined; rotating versus permanent night work combined
			None	751	1		
			0–14	283	0.95 (0.79–1.16)		
			15–29	72	0.93 (0.67–1.3)		
			≥ 30	28	2.21 (1.14–4.31)		
			Trend-test p-value: 0.50				
		Breast	Years of health occupations shift work history (OR)			Age, centre	
			None	62	1		
			0–14	38	0.8 (0.48–1.33)		
			15–29	26	1.06 (0.58–1.92)		
			≥ 30	12	3.11 (1.1–8.77)		
		Breast	Years of shift work history (OR)			Age, centre, BMI	
			Premenopausal: None	220	1		
			0–9	126	1.32 (0.97–1.8)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			10–19	27	0.99 (0.57–1.7)		
			≥ 20	18	1.3 (0.66–2.58)		
			Trend-test p-value: 0.3				
		Breast	Years of shift work history (OR)			Age, centre, BMI	
			Postmenopausal: None	531	1		
			0–14	142	0.75 (0.58–0.97)		
			15–29	48	0.97 (0.63–1.49)		
			≥ 30	22	1.63 (0.8–3.35)		
			Trend-test p-value: 0.8				
		Breast	30+ years of shiftwork versus none (OR)			Age, centre	
			20% evening/night shifts definition	57	1.18 (0.79–1.76)		
			40% evening/night shifts definition	30	1.97 (1.06–3.65)		
			60% evening/night shifts definition	18	3.09 (1.22–7.84)		
			80% evening/night shifts definition	11	3.73 (1.04–13.42)		
			100% evening/night shifts definition	5	2.63 (0.51–13.64)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
		Breast	Years of shift work history (OR)			Age, centre	
			ER/PR+: None	547	1		
			0–14	216	1 (0.81–1.23)		
			15–29	55	0.97 (0.68–1.39)		
			≥ 30	22	2.37 (1.18–4.76)		
		Breast	Years of shift work history (OR)			Age, centre	
			ER/PR-: None	116	1		
			0–14	37	0.78 (0.52–1.17)		
			15–29	11	0.9 (0.47–1.75)		
			≥ 30	2	1.06 (0.24–4.75)		
Menegaux et al. (2013) France, Cote d'Or and Ille-et-Vilaine 2005–2007 Case-Control	**Cases:** 1232; population-based **Controls:** 1317; population-based **Exposure assessment method:** other; Subjective assessment; night shift defined (exp 3+ hrs b/w 23–06)	Breast	Night work (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: No. Intensity: Precise. Duration: Complete. Temporality: Complete. Shift start/end times: Precise. No other info available. **Strengths:** None stated **Limitations:** None stated
			Never	1068	1		
			Ever	164	1.27 (0.99–1.64)		
		Breast	Night work (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			Parous women: Never	954	1		
			First night work after first full-term pregnancy	66	1.09 (0.77–1.55)		
			Night work before first full-term pregnancy	76	1.47 (1.02–2.12)		
		Breast	Type of night work (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	
			Never	1068	1		
			Late evening	42	1.25 (0.79–1.98)		
			Early morning	9	0.9 (0.36–2.21)		
			Overnight	120	1.35 (1.01–1.8)		
		Breast	Type of night work before first full-term pregnancy (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	
			Parous women: Never	954	1		
			Late evening	18	1.89 (0.87–4.08)		
			Early morning	6	1.09 (0.38–3.12)		
			Overnight	52	1.49 (0.96–2.32)		
		Breast	Total duration of night work periods (years) (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current	
			Never	1068	1		
			< 4.5	66	1.12 (0.78–1.6)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			≥ 4.5	98	1.4 (1.01–1.92)	hormonal replacement therapy, body mass index, tobacco, alcohol	
		Breast	Total duration of night work periods before first full-term pregnancy (years) (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	
			Parous women: Never	954	1		
			≤ 4	33	1.15 (0.7–1.89)		
			> 4	43	1.95 (1.13–3.35)		
		Breast	Average frequency of night shifts (nights/week) (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	
			Never	1068	1		
			< 3	84	1.43 (1.01–2.03)		
			≥ 3	80	1.14 (0.82–1.59)		
		Breast	Average frequency of night shifts before first full-term pregnancy (nights/week) (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current hormonal replacement therapy, body mass index, tobacco, alcohol	
			Parous women: Never	954	1		
			< 3	47	2.24 (1.35–3.71)		
			≥ 3	29	0.96 (0.56–1.62)		
		Breast	Cross-classification of duration and frequency of night shifts before first full-term pregnancy (OR)			Age, study area, parity, age at first full-term pregnancy, age at menarche, family history of breast cancer, current	
			Parous women: Never	954	1		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			≤ 4 years and < 3 nights/week	21	1.75 (0.89–3.42)	hormonal replacement therapy, body mass index, tobacco, alcohol	
			≤ 4 years and ≥ 3 nights/week	12	0.72 (0.34–1.51)		
			> 4 years and < 3 nights/week	26	3.03 (1.41–6.5)		
			> 4 years and ≥ 3 nights/week	17	1.3 (0.61–2.77)		
Rabstein et al. (2013) Bonn, Germany 2000–2004 Case-Control	**Cases:** 857; population-based, 80 years of age or younger with known ER status **Controls:** 892; population-based controls frequency-matched to cases by age in 5-year categories **Exposure assessment method:** other; Subjective assessment; night shift defined (exp 3+ hrs b/w 23–06)	Breast	cumulative number of lifetime night shifts (OR)			Age, family history of breast cancer, hormone replacement therapy, number of mammograms	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: Undefined. Intensity: Imprecise. Duration: Partial (limited period). No other info available. OTHER COMMENTS: Analyses of ever/never SW and NW, lifetime dur of employ with night, lifetime # of night shifts. **Strengths:** None stated **Limitations:** None stated
			ER + cases: Never employed in shift work	539	1		
			< 807 night shifts	18	0.66 (0.37–1.16)		
			> = 807 night shifts	15	1.56 (0.73–3.33)		
		Breast	cumulative number of lifetime night shifts (OR)			Same as above	
			ER – cases: Never employed in shift work	134	1		
			< 807 night shifts	6	0.71 (0.29–1.75)		
			> = 807 night shifts	7	2.34 (0.89–6.14)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
		Breast	Cumulative number of lifetime night shifts for shift systems with more than 3 nights per month (OR)			Same as above	
			ER + cases: Never employed in shift work	539	1		
			< 1056 night shifts	17	0.74 (0.41–1.36)		
			> = 1056 night shifts	13	1.46 (0.65–3.28)		
		Breast	Cumulative number of lifetime night shifts for shift systems with more than 3 nights per month (OR)			Same as above	
			ER – cases: Never employed in shift work	134	1		
			< 1056 night shifts	7	1.02 (0.44–2.4)		
			> = 1056 night shifts	6	2.11 (0.76–5.9)		
		Breast	duration of night shift work (years) (OR)			Same as above	
			ER + cases: Never employed in shift work	541	1		
			> 1- < 5	10	0.58 (0.27–1.22)		
			5- < 10	8	0.96 (0.39–2.4)		
			10- < 20	8	1.04 (0.41–2.64)		
			> = 20	7	1.81 (0.56–5.83)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
		Breast	duration of night shift work (years) (OR)			Same as above	
			ER – cases: Never employed in shift work	134	1		
			> 1- < 5	4	0.89 (0.3–2.64)		
			5- < 10	3	0.98 (0.26–3.64)		
			10- < 20	2	0.58 (0.1–2.72)		
			> = 20	4	4.73 (1.22–18.36)		
Fritschi et al. (2013) Australia 2009–2011 Case-Control	**Cases:** 1205; Women aged 18–80 with a histologically confirmed first incident invasive breast cancer identified from population-based cancer registry **Controls:** 1789; Women aged 18–80 frequency age-matched from electoral roll **Exposure assessment method:** other; Subjective assessment; night shift defined (other)	Breast	Night shift (graveyard) work (OR)			Age	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: Undefined. Intensity: Imprecise. Duration: Partial (limited period). Temporality: Complete. Rotation speed: Imprecise. Rotation direction: Imprecise. Start/end times: Imprecise. No other info available. **Strengths:** None stated **Limitations:** low participation fractions, especially for controls
			Never	914	1		
			Ever	288	1.16 (0.97–1.38)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
Pesch et al. (2010) Greater Bonn, Germany 2000–2004 Case-Control	**Cases:** 857; Women aged < = 80 years with a histologically confirmed first incident breast cancer identified from hospitals **Controls:** 892; Random sample from population registries in same study region, frequency matched by 5-year age. **Exposure assessment method:** other; Subjective assessment; night shift defined (exp 3+ hrs b/w 23–06)	Breast	Night shift work (OR)			Age, family history of breast cancer, hormone replacement use, number of mammograms	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: Undefined. Intensity: Imprecise. Duration: Partial (limited period). Temporality: Complete. No other info available. **Strengths:** none stated **Limitations:** none stated
			Employed, but never in shift work	698	1		
			Ever in night shift work	55	0.91 (0.55–1.49)		
		Breast	Duration of night shift work (OR)			Age, family history of breast cancer, hormone replacement use, number of mammograms	
			Employed, but never in shift work	698	1		
			> 0–4 years	15	0.65 (0.28–1.48)		
			5–9 years	11	0.93 (0.31–2.82)		
			10–19 years	10	0.83 (0.27–2.6)		
			≥ 20 years	12	2.48 (0.62–9.99)		
		Breast	Cumulative number of night shifts (OR)			Age, family history of breast cancer, hormone replacement use, number of mammograms	
			Employed, but never in shift work	698	1		
			< 807 night shifts	25	0.65 (0.34–1.26)		
			≥ 807 night shifts	23	1.73 (0.71–4.22)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
Papantoniou et al. (2016) Spain 2008–2013 Case-Control	**Cases:** 1708; Women aged 25–85 histologically confirmed first incident breast cancer identified resident for at least 6 months in the catchment area of the hospitals were they were identified **Controls:** 1778; Randomly selected from the rosters of General Practitioners at the Primary Health Centres participating in the study. Frequency matched by 5 year age and study area. **Exposure assessment method:** other; Subjective assessment; night shift defined (exp 3+ hrs b/w 23–06)	Breast	Night work (OR)			Age, centre, education level, parity, menopausal status, family history of breast cancer, body mass index, smoking status, oral contraceptive use, leisure time physical activity, alcohol consumption	EXPOSURE ASSESSMENT CRITIQUE: NSW in ref group: No. Intensity: Precise. Duration: Complete. Temporality: Complete. Schedule type: Perm night, Rotating. Shift start/end times: Imprecise. No other info available. **Strengths:** none stated **Limitations:** low participation fraction for controls
			Never	1438	1		
			Ever	270	1.18 (0.97–1.43)		
			Permanent	114	1.19 (0.89–1.6)		
			Rotating	156	1.17 (0.91–1.51)		
		Breast	Cumulative years of night work (OR)				
			Never	1438	1		
			1–4 years	67	1.21 (0.83–1.76)		
			5–14 years	103	1.13 (0.83–1.53)		
			≥ 15 years	97	1.21 (0.89–1.65)		
			Trend-test p-value: 0.176				
		Breast	Cumulative years of permanent night work (OR)			Same as above	
			Never	1438	1		
			1–4 years	32	1 (0.56–1.66)		
			5–14 years	46	1.17 (0.74–1.87)		
			≥ 15 years	34	1.49 (0.88–2.53)		
			Trend-test p-value: 0.109				
		Breast	Cumulative number of night shifts (OR)			Same as above	
			None	1438	1		
			36–599	62	1.15 (0.8–1.64)		
			600–1799	53	1.2 (0.85–1.7)		

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Table S2.1 Case–control studies of cancer of the breast included in the pooled study by Cordina-Duverger et al. (2018)

Reference, location follow-up/enrollment period, study-design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled	Comments
			≥ 1800	56	1.18 (0.83–1.69)		
			Trend-test p-value: 0.248				
		Breast	Cumulative number of permanent night shifts (OR)			Same as above	
			None	1438	1		
			36–599	14	0.96 (0.5–1.85)		
			600–1799	16	1.15 (0.65–2.04)		
			≥ 1800	20	1.48 (0.81–2.68)		
			Trend-test p-value: 0.149				

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